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TRENDS IN ANTIHYPERTENSIVE MEDICATION USE IN US OFFICE-BASED PRACTICES: ARE ELDERLY PATIENTS TREATED DIFFERENTLY?

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OBJECTIVES: 1) To investigate recent trends in antihypertensive medication prescribing among US adults with hypertension in office-based practices; 2) To determine if there are differences in the classes of antihypertensive agents prescribed for the elderly population as compared with younger patients. **METHODS:** The latest available National Ambulatory Medical Care Survey (NAMCS) (2003–2010) were analyzed. All encounters with ICD-9 codes for essential hypertension (eg, 401.0, 401.1, or 401.9) and patients aged ≥ 18 years were identified. Multivariate logistic regression analyses determined the adjusted associations between age (<60 years, ≥ 60 years) and the prescription use of antihypertensive classes, as well as prescribing year trend. Variance estimates were computed with the Taylor series linearization approximation. **RESULTS:** Approximately 674 million weighted office visits were included in the analysis. Overall, the prescription of antihypertensive medication increased from 69.2% in 2003 to 2004 to 78.8% in 2009 to 2010 (P trend<0.01) and the upward trend was consistent in both age groups. This was accompanied by an improvement in the overall hypertension control (from 39.6% to 49.3%, P trend<0.01). The proportions of visits with β -blocker (from 25.4% to 34.7%, P trend<0.01) and angiotensin receptor blocker (ARB) prescriptions (from 17.0% to 22.1%, P trend=0.02) increased for older patients. Prescribing rates for diuretics, β -blockers, and calcium-channel blockers (CCBs) were significantly higher among patients aged ≥ 60 years compared to their younger counterparts, while rates for ARBs and angiotensin-converting enzymes (ACEIs) were relatively comparable between the two groups. The increase in use of β -blockers in older patients persisted after excluding patients with congestive heart failure and ischemic heart disease. **CONCLUSIONS:** In office-based practices, antihypertensive medication prescribing among US adults with hypertension increased significantly in recent years which was accompanied by some improvement in hypertension control. The prescribing patterns differed among younger and older patients but continuous use of β -blockers without other compelling indications raises concerns.

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COMPARISON OF DIFFERENT METABOLIC SYNDROME CRITERIA AND INDIVIDUAL RISK FACTORS IN THE RISK PREDICTION OF CARDIOVASCULAR AND CHRONIC DISEASES

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OBJECTIVES: (1) To compare risks posed by the metabolic syndrome (MetS) diagnosed with four different criteria and cardiovascular risk factors in the development of diabetes mellitus 2 (T2D), cardiovascular disorders and other chronic disorders. (2) To determine if modification should be made to existing MetS definitions and standards of diagnosis of high risk patients. **METHODS:** A combination of NHANES 2009–2010 and 2010–2011 databases formed our study cohort. MetS criteria included harmonized 2009 World Health Organization definition, criteria from National Cholesterol Education Program Adult Treatment Panel III (NCEP-ATP III), International Diabetes Federation (IDF) and European Group for Study of Insulin Resistance (EGIR). Individual cardiovascular risk factors included smoking, alcoholism, albuminuria, elevated C-reactive protein levels and heredity of diabetes and cardiovascular disorders. Risk prediction was carried out for chronic disorders such as diabetes, cardiovascular disorders, arthritis, asthma, emphysema, bronchitis, cancer and AIDS. Adjusted relative risk (RRs) using Poisson regression was calculated for each criteria and individual risk factors. **RESULTS:** MetS failed to predict risk for cardiovascular disorders. However albuminuria (RR=2.25), smoking (RR=2.16) and heredity (RR=1.52) posed a risk for cardiovascular disorders. All except smoking (0.32) demonstrated high risk for asthma. Smoking (RR=4.15) along with all the MetS criteria (RR with WHO=2.63; NCEP=3.16; IDF=5.67) except European criteria (RR=0.67) predicted risk for emphysema. MetS (RR with WHO=2.24; Europe=5.43; NCEP=3.31; IDF=2.66) and albuminuria (RR=1.49) were good predictors of kidney conditions. Similarly MetS (RR with WHO=3.67; Europe=6.33; NCEP=4.24; IDF=1.89), albuminuria (RR=2.94), alcoholism (RR=3.08) and heredity (RR=3.74) were associated with risk for liver conditions. No MetS criteria and individual risk factors showed an association with risk for AIDS. **CONCLUSIONS:** Overall European MetS criteria emerged as the strongest risk predictor for chronic conditions. The RRs of individual risk factors depict significant chronic disease predicting ability. Recommendations may be made to policy makers to alter or make additions to the current MetS definition.

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HYPERKALEMIA IS HIGHLY PREVALENT IN PATIENTS WITH CARDIOPULMONARY COMORBIDITIES COMPARED TO PATIENTS WITHOUT THESE COMORBIDITIES

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OBJECTIVES: To investigate the prevalence of hyperkalemia in patients with chronic kidney disease (CKD) or heart failure (HF). **METHODS:** De-identified medical records (2007–2012) from a US population aged ≥ 5 years with ≥ 2 potassium (K+) readings were evaluated. Inclusion criteria: ≥ 1 K+ value between 2.5 and 10 mEq/L during 2008 to 2012. Exclusion criteria: acute kidney injury (AKI). Hyperkalemia was classified as mild (K+ 5.1 to 5.4 mEq/L) or moderate/severe (K+ ≥ 5.5 mEq/L) based on patient's highest measured value. Patient comorbidities were assessed: CKD by stage, end-stage renal disease (ESRD), HF, diabetes, and disease combinations. Control patients had no CKD stage 2+, ESRD, HF, diabetes or AKI. Chi-square tests assessed whether prevalence of hyperkalemia differed significantly between control patients and those with comorbidities. Hyperkalemia prevalence was also compared by age group (<65 years vs ≥ 65 years). **RESULTS:** 1,636,337 patients were evaluated; mean age, 56 years; 56%

female; 48% control patients. Overall, 15.8% of patients experienced hyperkalemia: 9.8% had ≥ 1 mild hyperkalemia event and 6.1% had moderate/severe events. 8.5% of control patients experienced hyperkalemia events compared with 23.5% of patients with HF, 29.5% of patients with CKD stages 3–4, and 47.6% of patients with HF and CKD stages 3–4. Hyperkalemia was more prevalent in patients with each measured comorbidity compared to control patients, and its severity increased with CKD severity (all comparisons, P<0.0001). Moderate/severe hyperkalemia was more prevalent in patients with later-stage CKD compared to patients with earlier stage kidney disease. Prevalence of hyperkalemia was generally higher in patients aged ≥ 65 years than in similarly comorbid patients aged <65 years. **CONCLUSIONS:** A retrospective analysis of electronic medical record data demonstrated that hyperkalemia was more common in patients with HF and/or CKD—especially in those with more advanced disease—than in patients without these comorbidities.

PCV34

VENOUS THROMBOEMBOLISM PREVALENCE IN FRENCH AND US HOSPITALS: COMPARISON ON THE BASIS OF THE NATIONAL DATA BASES

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OBJECTIVES: describe the national prevalence of deep vein thrombosis (DVT) and pulmonary embolism (PE), among patients hospitalized in private and public French hospitals and to compare it to those described in US Hospitals. **METHODS:** The statistics are from the national PMSI MCO databases inspired by the US Medicare system. Data are encoded using ICD10. The codes used for VTE are I801 to I809 for DVT and codes I260, I269 for PE. The analyses identify all VTE, DVT without PE (DVT) and PE with or without previous/associated DVT. The study data cover the period 2005 to 2011. The French data are compared to those issued in the Morbidity, Mortality Weekly Report of the Centre for Disease Control and Prevention. **RESULTS:** Data from the national database reveal that over the period 2005 to 2011 the incidence of hospital stays came to 860 343 (1.09%) for VTE, with 428 261 (0.543%) for DVT without PE and 432 082 (0.548%) for PE. The mean number of VTE hospitalized per year over the period was 122 906, including 61 180 for DVT and 61 726 for PE. Out of the French population >18y, those 122 906 VTE correspond to an incidence of 247 hospitalizations for 100 000 vs. 239 in the USA for the VTE, of 124 vs. 118 for the DVT without EP and of 123 vs. 121 for the EP which is very similar. These instances of VTE occurred in France for 43.4% in men vs. 45.8% in the USA and 56.6% vs. 54.2% in women. **CONCLUSIONS:** French VTE incidence is high and similar to those described in the USA. These results point out an alarming situation that questions the quality of prevention and/or its effectiveness. VTE prevention policies must be strengthened in hospitals for the sake of patients and healthcare savings alike.

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THE PREVALENCE AND ODDS-RATIOS OF SELF-REPORTED DIAGNOSIS OF HYPERTENSION AMONG US ADULTS BY RACIAL/ETHNIC SUBGROUPS, EXAMINING THE JOINT EFFECT OF MULTIPLE RISK FACTORS: NATIONAL HEALTH INTERVIEW SURVEY, 2004 - 2013

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OBJECTIVES: The differences in prevalence and odds ratios of self-reported hypertension among racial/ethnic groups in the United States have not been fully explained. This current study focused on investigating the prevalence and the joint effect of multiple risk factors on self-reported hypertension in the United States ethnic subgroups. **METHODS:** A cross-sectional study design was used to determine the prevalence of self-reported hypertension among non-Hispanic whites, non-Hispanic blacks, and Hispanics in the National Health Interview Survey (NHIS), 2004–2013. An estimated total of 607 million cases of self-reported hypertension among United States adults 18 years or older was identified. Logistic regression models were utilized to estimate the odds ratios (OR) and 95% confidence intervals for the selected risk factors associated with hypertension. **RESULTS:** The overall prevalence of self-reported hypertension in the non-Hispanic whites, non-Hispanic blacks, and Hispanics was 29.4%, 35.4%, and 19.5% respectively. After adjusting for the selected risk factors, a subgroup analysis of subjects aged 18–44 years non-Hispanic black males and females were found to have statistically significant lower odds of self-reporting hypertension compared to non-Hispanic whites (adjusted odds ratios (AOR), 0.62; 95% CI, 0.57–0.66; P < 0.01 males; AOR, 0.62; 95% CI, 0.58–0.66; P < 0.01 females, respectively). In contrast, non-Hispanic blacks aged 45 to 64 years (AOR, 1.42; 95% CI, 1.33–1.53; P < 0.01 males; AOR, 2.39; 95% CI, 2.24–2.54; P < 0.01 females, respectively) had statistically significant higher odds of self-reporting hypertension compared to non-Hispanic whites aged 45 to 64 years. **CONCLUSIONS:** This result challenges the commonly held belief that all blacks have a higher prevalence of hypertension, and underscores the need for data segmentation to further determine with more precision the age at which non-Hispanic blacks shift from being less likely to self-reporting hypertension to more likely than non-Hispanic whites.

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GEOGRAPHIC DIFFERENCES IN AVAILABILITY OF ANTIHYPERTENSIVE MEDICATIONS: A COMPARISON OF AUSTRALIA, CANADA, SAUDI ARABIA, UK, AND THE US

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OBJECTIVES: To compare the number of antihypertensive medications that were approved by the US Food and Drug Administration, the UK Medicines and Healthcare Products Regulatory Agency, the Australian Therapeutic Goods Administration, Health Canada, and the Saudi Food & Drug Authority as of [2014]. **METHODS:** Antihypertensive medications information was collected from the websites of the agencies. Hypertension prevalence by country was collected from the WHO website. Descriptive analysis was conducted in the study. Spearman correlation was used to estimate the correlation between the number of approvals and hypertension prevalence. SAS version 9.3 was used in the analysis. **RESULTS:** The prevalence